Date: 12-04-2021

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)- 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**26.54%**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**28.39%**	Not more than 35.0 %
3.	Water absorption, %	**0.41%**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-W6 Date: 15-04-2021

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.

{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

1. Gradation Test:

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	**100.00**	100
45.00	**96.40**	95-100
26.50	**---**	-
22.40	**73.15**	60-80
11.20	**51.25**	40-60
4.75	**35.65**	25-40
2.36	**23.80**	15-30
0.600	**19.30**	8-22
0.075	**3.75**	0-5

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Date: 15-04-2021

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.65%**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**28.16%**	Not more than 35.0 %
3.	Water absorption, %	**0.41%**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-BD1

Date: 01-06-2021

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.

{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**52.70^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**108.50 cm**	40
3.	Flash point	**246^0 C**	Minimum 220^0 C
4.	Softening point	**51.30^0 C**	Min. 47

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/WS/2020-21/F3-1-BDU Date: 01-06-2021

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade

(Project): Improvements to Roads and Drains at Bhagath Vinkers, Kaikondrahalli layout, Chamundeshwari nagara, Dabaspet, Srirangapura, MUDA III Layout, Palanahalli and Surrounding areas in Ward No.195)

Ref: Material testing/QMP/Clr-11,

Report Required by: Assistant Executive Engineer,
Byrathanjanapura Sub Division,
BBMP, Bangalore

Name of the Agency/Contractor: M/s SMR Asphalts, Prop: N N Umesh, Bangalore

Technical Reference: Ministry of Road Transport and Highways, Volume, 2013 and IS 73: 1992

TABLE 1.1:

Sl. No	Details	Test Results	Requirements as per IS 73-1992 Specifications
1	Penetration at 25° C	52.70° C	Min 45
2	Ductility Value at 25° C	100.50 cm	40
3	Flash point	240° C	Minimum 220° C
4	Softening point	51.30° C	Min 47

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-CD1 **Date: 01-06-2021**

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Dense Graded Bituminous Macadam.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TABLE 1.1 ;

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**23.19%**	Not more than 27.00 % for DBM
2.	Combined Flakiness and Elongation index, %	**26.73%**	Not more than 35.0 %
3.	Water absorption, %	**0.42%**	Not more than 2.0 %
4.	Specific gravity	**2.62**	-------
5.	Soundness	**6.84 %**	Max. 12 % in Sodium Sulphate

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DBM1 Date: 03-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.

{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.52 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	100	100
26.5	96.25	90-100
19.0	83.15	71-95
13.20	71.35	56-80
4.75	46.70	38-54
2.36	32.05	28-42
0.300	18.40	7-21
0.075	6.80	2-8

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DS1 **Date: 03-06-2021**

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1246**	900
2	Marshall Flow at 60°C, mm.	**3.34**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DBM2

Date: 04-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**98.45**	90-100
19.0	**82.55**	71-95
13.20	**74.60**	56-80
4.75	**45.10**	38-54
2.36	**37.80**	28-42
0.300	**16.25**	7-21
0.075	**5.15**	2-8

. The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DS2 Date: 04-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.

{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1256**	900
2	Marshall Flow at 60°C, mm.	**3.42**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DBM3

Date: 04-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.54 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**97.15**	90-100
19.0	**84.15**	71-95
13.20	**73.40**	56-80
4.75	**45.70**	38-54
2.36	**37.05**	28-42
0.300	**15.90**	7-21
0.075	**6.15**	2-8

. The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DS3

Date: 04-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1258**	900
2	Marshall Flow at 60°C, mm.	**3.46**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DBM4 Date: 07-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

B. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.52 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**96.25**	90-100
19.0	**83.15**	71-95
13.20	**71.35**	56-80
4.75	**48.70**	38-54
2.36	**36.05**	28-42
0.300	**18.40**	7-21
0.075	**5.80**	2-8

. The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DS4 Date: 07-06-2021

LTEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1248**	900
2	Marshall Flow at 60°C, mm.	**3.36**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DBM5

Date: 10-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

B. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**95.45**	90-100
19.0	**87.55**	71-95
13.20	**74.60**	56-80
4.75	**48.10**	38-54
2.36	**35.80**	28-42
0.300	**17.25**	7-21
0.075	**6.15**	2-8

. The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC /BBMP/2020-21/P2-2-DBS Date: 10-06-2021

LIST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
(Project: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Sriramppura, MCHS Layout, Palanahalli and Surrounding areas in Ward No.05)
Ref: Material testing/PMC/20-21.
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs	1262	900
2	Marshall Flow at 60°C, mm.	3.50	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DBM6 Date: 10-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

B. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.54 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**97.15**	90-100
19.0	**81.15**	71-95
13.20	**73.40**	56-80
4.75	**48.70**	38-54
2.36	**36.05**	28-42
0.300	**18.90**	7-21
0.075	**5.15**	2-8

. The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DS6 Date: 10-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}

Ref.: Material testing/PMC/20-21,

Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1250**	900
2	Marshall Flow at 60°C, mm.	**3.42**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DBM7 Date: 14-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

C. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.52 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**96.25**	90-100
19.0	**84.15**	71-95
13.20	**70.35**	56-80
4.75	**46.70**	38-54
2.36	**33.05**	28-42
0.300	**17.40**	7-21
0.075	**6.80**	2-8

. The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DS7 Date: 14-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}

Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1246**	900
2	Marshall Flow at 60°C, mm.	**3.34**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DBM8 Date: 16-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

C. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**98.45**	90-100
19.0	**82.55**	71-95
13.20	**74.60**	56-80
4.75	**48.10**	38-54
2.36	**34.80**	28-42
0.300	**17.25**	7-21
0.075	**6.15**	2-8

. The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DS8 Date: 16-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub To determine the stability of bituminous mix for DBM mix sample.
(Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No 05)
Ref. Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1254**	900
2	Marshall Flow at 60°C, mm.	**3.42**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DBM9 Date: 16-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

C. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.54 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**95.15**	90-100
19.0	**82.15**	71-95
13.20	**70.40**	56-80
4.75	**45.70**	38-54
2.36	**37.05**	28-42
0.300	**18.90**	7-21
0.075	**6.15**	2-8

. The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DS9

Date: 16-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1254**	900
2	Marshall Flow at 60°C, mm.	**3.40**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DBM10 Date: 19-06-2021

LTEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}

Ref.: Material testing PMC/20-21,

Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

D. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.52 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**94.25**	90-100
19.0	**83.15**	71-95
13.20	**71.35**	56-80
4.75	**49.70**	38-54
2.36	**32.05**	28-42
0.300	**17.40**	7-21
0.075	**5.80**	2-8

. The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DS10 Date: 19-06-2021

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1252**	900
2	Marshall Flow at 60°C, mm.	**3.40**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-DBM11 Date: 22-06-2021

LTEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No 05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TEST RESULTS

D. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**97.45**	90-100
19.0	**82.55**	71-95
13.20	**74.60**	56-80
4.75	**48.10**	38-54
2.36	**33.80**	28-42
0.300	**16.25**	7-21
0.075	**7.15**	2-8

. The result of the materials tested meets the standards and hence can be used for the work.

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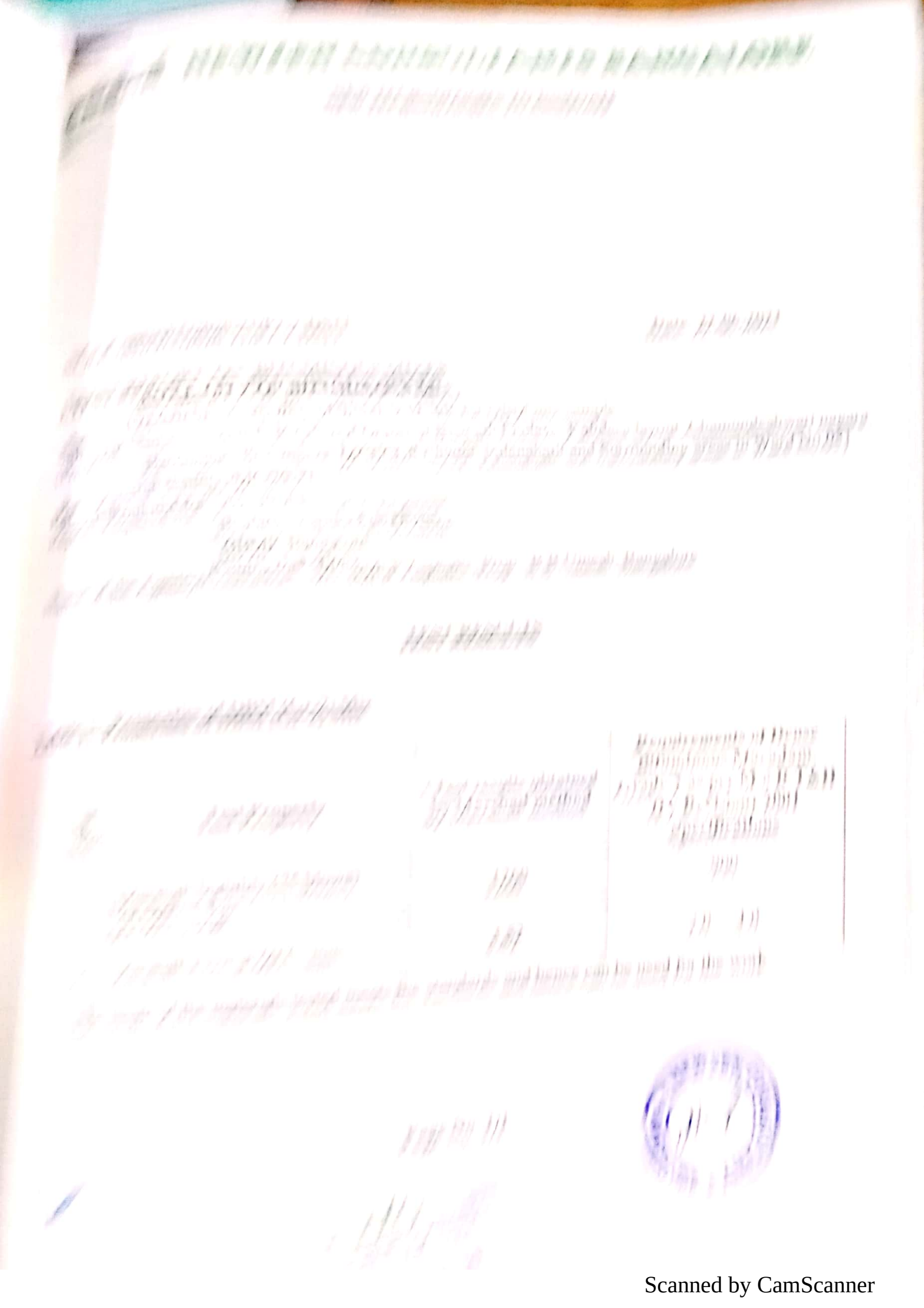

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NC/QC/BD/W5/2020-21/P2-2-BB1

Date: 03-06-2021

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.
{Project*: Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Babanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05}
Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.
Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**51.40^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**109.0 cm**	40
3.	Flash point	**236^0 C**	Minimum 220^0 C
4.	Softening point	**50.20^0 C**	Min. 47

The result of the materials tested meets the standards and hence can be used for the work.

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NC/QC/BD/W5/2020-21/P2-2-CB1

Date: 03-06-2021

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Bituminous Concrete.
(Project* Improvements to Roads and Drains at Bhagath Enclave, Kalidasa layout, Chamundeshwari nagara, Bahanagar, Srirampura, MCECHS Layout, Palanahalli and Surrounding areas in Ward No.05)

Ref.: Material testing/PMC/20-21,
Report Required for: Assistant Executive Engineer,
Byatarayanapura Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SMLP Asphalts, Prop : B B Umesh, Bangalore.

TABLE 1.1 :

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M o R T H Specification, V Revision -2013.
1.	Aggregate Impact Value	22.86 %	Not more than 24.00 %
2.	Combined Flakiness and Elongation index, %	27.69 %	Not more than 35.0 %
3.	Water absorption, %	0.42%	Not more than 2.0 %
4.	Specific gravity	2.62	-------
5.	Soundness	5.36%	Max. 12 % in Sodium Sulphate

The result of the materials tested meets the standards and hence can be used for the work.

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